# Position Description

## Research Scientist/Engineer – CSOF5

The following information is for applicants

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| Advertised Job Title**:** | Research Scientist in AI applications in Medicine |
| Job Reference: | 59040 |
| Relocation Assistance**:** | Will be provided to the successful candidate if required. |
| Applications Are Open To: | [ ]  Australian Citizens Only[x]  Australian/New Zealand Citizens and Australian Permanent Residents Only* [ ]  All Candidates
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| Percentage of Client Focus - Internal: | 100% |
| Percentage of Client Focus - External: | 0% |
| Reports to the: | Research Team Leader |
| Number of Direct Reports: | 0 |
| Name and Contact Details For Applicant Enquiries  | Prof Yogi Kanagasingam, kan063@csiro.au |
| Contact Details For Applying | Call 1300 984 220 or email careers.online@csiro.au.  |
| How to Apply: | Please apply online at [jobs.csiro.au](https://jobs.csiro.au/) and enter the requisition number**.** Internal applicants please apply via ‘Jobs Central’ through the ‘People Hub’ icon  |

## Role Overview:

The role of **Research Scientist** (RS) Staff in CSIRO is to conduct innovative research leading to scientific achievements that are aligned with CSIRO's strategies. You may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. You will have the opportunity to build and maintain networks, play a lead role in securing project funds, provide scientific leadership and pursue new ideas and approaches that create new concepts.

We are seeking to appoint a highly motivated Research Scientist to undertake research into application of artificial intelligence in medicine including development of clinical decision support system. The RS will contribute to the development of AI based clinical decision support systems for ophthalmology, burns and other applications. The successful candidate will join a multidisciplinary team working within the Australian e-Health Research Centre (AEHRC), part of the CSIRO Health and Biosecurity in Perth.

The successful applicant will work as part of the AEHRC Telehealth and Mobile Health team.

It will be a great opportunity for the successful candidate to work with a multidisciplinary, world-renowned research teams in a cutting edge research project. The RS will have a unique opportunity to translate their research into clinical practice in Australia and around the world.

## Duties and Key Result Areas:

* Under the direction of senior research scientists, carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
* Development and validation of a diabetic retinopathy and age related macular degeneration clinical decision support and autograding system for use in the field. This will be a translational research project.
* Develop next generation AI based decision support systems with advanced imaging and machine learning.
* Develop imaging algorithms for automated disease grading.
* Develop high quality software using C++, JAVA and HTML5.
* Grow and maintain scientific citizenship, and collaborations with international and local partners.
* Contribute to the development of cutting edge scientific methods delivered through cloud computing and using mobile phone technologies.
* Supervise and mentor junior researchers and students.
* Participate in a large clinical-trial to assist system deployment and data collection.
* Undertake regular reviews of relevant literature and patents.
* Produce high quality scientific papers suitable for publication in high impact journals, for client reports and granting of patents.
* Prepare appropriate conference papers and present those at conferences as agreed with your supervisor.
* Contribute to the development of innovative concepts and ideas for further research.
* Make a contribution to the effective functioning of the research team and help deliver CSIRO’s organisational objectives and plans.
* Work collaboratively with colleagues within your team, the business unit and across CSIRO.
* Communicate effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Undertake an appropriate training and development program developed by CSIRO.
* Other duties as directed.

## Competencies: DO NOT DELETE OR EDIT

1. **Teamwork and Collaboration: Cooperates with others to achieve organisational objectives and may share team resources in order to do this. Collaborates with other teams as well as industry colleagues.**
2. **Influence and Communication: Uses knowledge of other party's priorities and adapts presentations or discussions to appeal to the interests and level of the audience. Anticipates and prepares for others reactions.**
3. **Resource Management/Leadership: Allocates activities, directs tasks and manages resources to meet objectives. Provides coaching and on the job training, recognises and supports staff achievements and fosters open communication in the team.**
4. **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
5. **Independence: Recognise and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).**
6. **Adaptability:** Copes with ambiguity or situations that lack clarity. Adapts readily to changing circumstances and new responsibilities (which may include activities outside own preferences) in the interests of achieving team objectives. Recognises the need for and undertakes personal development as a result of changes.

## Selection Criteria:

*Under CSIRO policy only those who meet all selection criteria can be appointed.*

***Pre-Requisites:***

1. Education/Qualifications: A doctorate and or equivalent research experience in a relevant discipline area, such as computer science or health science. We expect applicant with considerable experience working in the medical area especially ophthalmology applications.

***Essential Criteria:***

1. Experience in developing auto-disease grading and clinical decision support system for eye diseases based on colour fundus images and OCT images.
2. Research experience in the field of Telemedicine and conducting large scale clinical trials
3. Demonstrated competence and experience in research innovation, problem solving and application of knowledge, as evidenced by publications and research experience.
4. Demonstrated experience in developing imaging algorithms, telemedicine and mobile health systems, with knowledge of HL7, DICOM and other imaging standards.
5. Demonstrated competency in C++, JAVA, HTML5 and software development processes/environments (including MS Visual Studio and mobile phone technologies).
6. Demonstrated experience and knowledge with communication modalities, data compression and data security.
7. Demonstrated ability to establish national and international research and industry collaborations
8. Excellent communication and interpersonal skills, showing independence, good judgment and adaptability.
9. **The ability to work effectively as part of a multi-disciplinary, regionally dispersed research team, and carry out independent individual research, to achieve organisational goals.**
10. A record of science innovation and creativity plus the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

***Desirable Criteria:***

1. **Experience with diseases, treatment and imaging methods in ophthalmology**
2. **Experience supervising students and junior staff**
3. **Knowledge of cloud computing and development of mobile phone apps**
4. **Past experience working with clinicians and hospitals**

## Special Requirements:

Appointment to this role may be subject to conditions including security/national police/medical/character clearance requirements. Applicants who are not Australian Citizens or Permanent Residents may be required to undergo additional security clearances, which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test).- <https://ielts.com.au/>

## About CSIRO:

We imagine. We collaborate. We innovate. To find out more visit us [online](http://www.csiro.au/)!

Find out more about CSIRO [Health and Biosecurity](https://www.csiro.au/en/Research/BF)